

# RK11K 1 1 mm Size Insulated Shaft Snap-in Type

A 1 1 mm wide potentiometer for audio, visual, electronic musical instruments and various applications



## Typical Specifications



| Items                       | Specifications |
|-----------------------------|----------------|
| Total resistance tolerance  | ±20%           |
| Maximum operating voltage   | 50V AC, 20V DC |
| Total rotational angle      | 300° ±5°       |
| Rotational torque           | 3 to 20mN·m    |
| Operating life              | 15,000 cycles  |
| Operating temperature range | -10°C to +70°C |

## Product Line

| Number of resistor elements | Mounting direction | Bushing | Shaft type | Length of the shaft LM <sub>1</sub> (mm) | Center detent | Total resistance (kΩ) | Resistance taper | Minimum order unit (pcs.) |  | Products No.                 | Drawing No. |
|-----------------------------|--------------------|---------|------------|--|---------------|-----------------------|------------------|---------------------------|--|------------------------------|-------------|
|                             |                    |         |            |  |               |                       |                  | Japan                     | Export                                       |                              |             |
| Single-unit (20V DC)        | Vertical type      | Without | Flat       | 15                                       | Without       | 10                    | 1B               | 1,200                     | 2,400  | RK11K1130A2X                 | 2           |
|                             |                    |         |            | 20                                       | With          |                       |                  | 1,000                     | 2,000  | RK11K1130A0M<br>RK11K1130040 |             |
|                             |                    |         |            | 25                                       | Without       | 800                   |                  | 1,600                     | RK11K1130A07<br>RK11K113002F                 |                              |             |
|                             |                    |         |            | 20                                       | With          | 20                    |                  |                           |  |                              |             |
|                             |                    | 22.5    |            | Without                                  | 10            | 1,000                 |                  | 2,000                     | RK11K114003Y<br>RK11K1140A9L                 | 4                            |             |
|                             |                    | 25      |            | With                                     | 20            |                       |                  |                           |  |                              |             |
|                             |                    | 27.5    |            | Without                                  | 20            | 800                   |                  | 1,600                     | RK11K1140A23<br>RK11K114001Z<br>RK11K1140A3L |                              |             |
|                             |                    | 30      |            |  | 10            |                       |                  |                           |  |                              |             |
|                             | 32.5               | Without | 10         |  |               |                       |                  |                           |  |                              |             |
|                             | Horizontal type    | Without | With       | 25                                       | Without       | 20                    | 800              | 1,600                     | RK11K1140A2S<br>RK11K1110A3D                 | 1                            |             |
|                             |                    |         |            | 22.5                                     |               | With                  | 20               | 1,000                     | 2,000  | RK11K1120060                 |             |
|                             |                    |         |            | 25                                       | Without       | 10                    | 800              | 1,600                     | RK11K1120A5T<br>RK11K1120A31                 | 3                            |             |
|                             |                    |         |            | 27.5                                     |               | 20                    | 15A              |                           |  |                              |             |

## Notes

- Other varieties are also available. Refer to "Other Specifications" (P.355).
- Nut and washer are not attached. Please specify if required.

## Packing Specifications

### Tray

| Length of the shaft LM <sub>1</sub> (mm) | Number of packages (pcs.) |                         | Export package measurements (mm) |
|--|---------------------------|-------------------------|----------------------------------|
|  | 1 case / Japan            | 1 case / export packing |                                  |
| 15                                       | 1,200                     | 2,400                   | 543×377×250                      |
| 20 to 22.5                               | 1,000                     | 2,000                   |                                  |
| 25 or more                               | 800                       | 1,600                   |                                  |

Refer to P.355 for other specifications.  
Refer to P.356 for ordering products not listed.  
Refer to P.366 for soldering conditions.

# RK11K 1.1 mm Size Insulated Shaft Snap-in Type

## Dimensions

Unit:mm

| No.             | Photo   | Style   | PC board mounting hole dimensions<br>(Viewed from mounting side)                    |      |      |      |                |     |      |                |  |    |      |    |   |    |                |   |   |    |    |    |    |   |
|-----------------|---|---|---|------|------|------|----------------|-----|------|----------------|--|----|------|----|---|----|----------------|---|---|----|----|----|----|---|
| 1               |    |   |  |      |      |      |                |     |      |                |  |    |      |    |   |    |                |   |   |    |    |    |    |   |
| 2               |   | <table border="1" data-bbox="657 757 826 801"> <tr> <td>LM<sub>1</sub></td> <td>15</td> <td>20</td> <td>25</td> </tr> <tr> <td>ℓ<sub>1</sub></td> <td>4.5</td> <td>7</td> <td>12</td> </tr> </table>   | LM <sub>1</sub>   | 15   | 20   | 25   | ℓ <sub>1</sub> | 4.5 | 7    | 12             |  |    |      |    |   |    |                |   |   |    |    |    |    |   |
| LM <sub>1</sub> | 15  | 20  | 25  |      |      |      |                |     |      |                |  |    |      |    |   |    |                |   |   |    |    |    |    |   |
| ℓ <sub>1</sub>  | 4.5   | 7   | 12  |      |      |      |                |     |      |                |  |    |      |    |   |    |                |   |   |    |    |    |    |   |
| 3               |  | <table border="1" data-bbox="657 1153 826 1220"> <tr> <td>LM<sub>1</sub></td> <td>22.5</td> <td>25</td> <td>27.5</td> </tr> <tr> <td>L<sub>1</sub></td> <td>15</td> <td>17.5</td> <td>20</td> </tr> <tr> <td>ℓ<sub>1</sub></td> <td>7</td> <td>12</td> <td>12</td> </tr> </table>   | LM <sub>1</sub>   | 22.5 | 25   | 27.5 | L <sub>1</sub> | 15  | 17.5 | 20             | ℓ <sub>1</sub>   | 7  | 12   | 12 |  |    |                |   |   |    |    |    |    |   |
| LM <sub>1</sub> | 22.5  | 25  | 27.5  |      |      |      |                |     |      |                |  |    |      |    |   |    |                |   |   |    |    |    |    |   |
| L <sub>1</sub>  | 15  | 17.5  | 20  |      |      |      |                |     |      |                |  |    |      |    |   |    |                |   |   |    |    |    |    |   |
| ℓ <sub>1</sub>  | 7   | 12  | 12  |      |      |      |                |     |      |                |  |    |      |    |   |    |                |   |   |    |    |    |    |   |
| 4               |  | <table border="1" data-bbox="657 1541 949 1608"> <tr> <td>LM<sub>1</sub></td> <td>20</td> <td>22.5</td> <td>25</td> <td>27.5</td> <td>30</td> <td>32.5</td> </tr> <tr> <td>L<sub>1</sub></td> <td>12.5</td> <td>15</td> <td>17.5</td> <td>20</td> <td>22.5</td> <td>25</td> </tr> <tr> <td>ℓ<sub>1</sub></td> <td>7</td> <td>7</td> <td>12</td> <td>12</td> <td>12</td> <td>12</td> </tr> </table>  | LM <sub>1</sub>   | 20   | 22.5 | 25   | 27.5           | 30  | 32.5 | L <sub>1</sub> | 12.5   | 15 | 17.5 | 20 | 22.5  | 25 | ℓ <sub>1</sub> | 7 | 7 | 12 | 12 | 12 | 12 |  |
| LM <sub>1</sub> | 20  | 22.5  | 25  | 27.5 | 30   | 32.5 |                |     |      |                |  |    |      |    |   |    |                |   |   |    |    |    |    |   |
| L <sub>1</sub>  | 12.5  | 15  | 17.5  | 20   | 22.5 | 25   |                |     |      |                |  |    |      |    |   |    |                |   |   |    |    |    |    |   |
| ℓ <sub>1</sub>  | 7   | 7   | 12  | 12   | 12   | 12   |                |     |      |                |  |    |      |    |   |    |                |   |   |    |    |    |    |   |

# 1 mm Size Insulated Shaft Snap-in Type / Other Specifications

In addition to the products listed, we can accommodate the follow specifications.

## Total Resistance Variety

|                        |   |    |    |    |     |     |
|------------------------|---|----|----|----|-----|-----|
| Total resistance (k Ω) | 5 | 10 | 20 | 50 | 100 | 200 |
|------------------------|---|----|----|----|-----|-----|

## Resistance Taper

|                  |     |    |    |     |
|------------------|-----|----|----|-----|
| Resistance taper | 15A | 1B | 3B | 15C |
|------------------|-----|----|----|-----|

## Tapped Types are Also Available

RK11K (single-unit) is also available with tap.

## Shaft Variety

| Style         |                 | Without bushing |    |               |    | With bushing    |      |               |      |      |      |
|---------------|-----------------|-----------------|----|---------------|----|-----------------|------|---------------|------|------|------|
|               |                 | Horizontal type |    | Vertical type |    | Horizontal type |      | Vertical type |      |      |      |
| Shaft variety | LM <sub>1</sub> | 15              | 20 | 25            | 30 | 20              | 22.5 | 25            | 27.5 | 30   | 32.5 |
|               | L <sub>1</sub>  | —               | —  | —             | —  | 12.5            | 15   | 17.5          | 20   | 22.5 | 25   |
|               | ℓ <sub>1</sub>  | 4.5             | 7  | 12            | 12 | 7               | 7    | 12            | 12   | 12   | 12   |
|               | L <sub>B</sub>  | —               | —  | —             | —  | 5               | 5    | 5             | 5    | 5    | 5    |

Detail dimensions



LM<sub>1</sub> =15 only application



## Terminal Layout / Circuit Diagram



## Note

Marked are specifications recommended by Alps Alpine.

Refer to P.356 for ordering products not listed.

Rotary Potentiometers  
 Slide Potentiometers  
 Metal Shaft  
 Insulated Shaft  
 Knob Operating  
 Through Shaft Type  
 Ring Type

# 11 mm Size Insulated Shaft Snap-in Type / Ordering Products Not Listed

When ordering product varieties that are not listed, specify referring to the examples below.

## Sample Part Number

**R K 1 1 K 1 1 4 0** — **F 2 2** — **C 0** — **B 1 0 3**

Model type \_\_\_\_\_

| Code | Model type                      |
|------|---------------------------------|
| 1    | Horizontal type without bushing |
| 2    | Horizontal type with bushing    |
| 3    | Vertical type without bushing   |
| 4    | Vertical type with bushing      |

Shaft type \_\_\_\_\_

| Code | Shaft type |
|------|------------|
| F    | Flat       |

\*Only available in flat format.

Length of the shaft LM<sub>1</sub> (mm) \_\_\_\_\_

| Code | Length of the shaft | Code | Length of the shaft |
|------|---------------------|------|---------------------|
| 15   | 15                  | 25   | 25                  |
| 20   | 20                  | 30   | 30                  |
| 22   | 22.5                | 32   | 32.5                |
| 27   | 27.5                | —    | —                   |

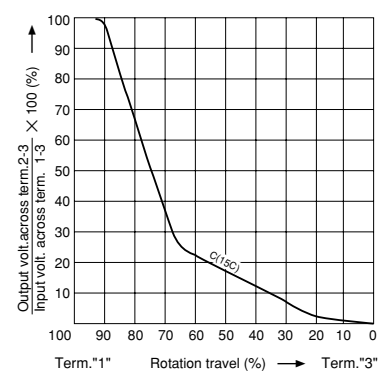
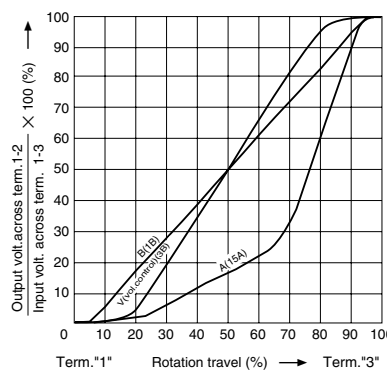
Detent \_\_\_\_\_

| Code | Center detent |
|------|---------------|
| C0   | Without       |
| C1   | With          |

Resistance taper \_\_\_\_\_

| Code | Resistance taper | Code | Resistance taper |
|------|------------------|------|------------------|
| A    | 15A              | C    | 15C              |
| B    | 1B               | V    | 3B               |

B : For tone & general  
V : For vol.



Total resistance \_\_\_\_\_

| Code | Total resistance (k Ω) | Code | Total resistance (k Ω) |
|------|------------------------|------|------------------------|
| 502  | 5                      | 503  | 50                     |
| 103  | 10                     | 104  | 100                    |
| 203  | 20                     | 204  | 200                    |

## Note

Marked are specifications recommended by Alps Alpine.

# Insulated Shaft Potentiometers

## List of Varieties

| Type                         | 9mm size  |  |   | 11mm size  | 12mm size   | 14mm size  |                                    |
|------------------------------|---|--|---|--|---|--|------------------------------------|
| Series                       | <b>RK09K11</b><br><b>RK09D11</b>  | <b>RK09K12</b>   | <b>RK09Y11L</b>   | <b>RK11K</b>   | <b>RK12L12</b>  | <b>RK14K</b>   |                                    |
|                              | Single-unit   | Dual-unit  | Single-unit   | Single-unit  | Dual-unit   | Dual-unit  |                                    |
| Photo                        |  |   |  |  |  |     |                                    |
| Terminal mounting            | Vertical / Horizontal   |  | Horizontal  | Vertical / Horizontal  |   |  |                                    |
| Bushing                      | Without   |  |   | With / Without   | Without   | With / Without   |                                    |
| Operating temperature range  | -10°C to +70°C  |  |   |  |   |  |                                    |
| Operating life               | 5,000 cycles  | 10,000 cycles  | 1,000,000 cycles  | 15,000 cycles  |   |  |                                    |
| Available for automotive use | —   | —  | —   | —  | —   | —  |                                    |
| Life cycle                   |  |  |  |  |  |     |                                    |
| Electrical performance       | Total resistance (k Ω)  | 5, 10, 20, 50, 100, 200  |   | 10   | 5, 10, 20, 50, 100, 200   |  |                                    |
|                              | Resistance taper  | 15A, 1B, 3B, 15C   |   | B  | 15A, 1B, 3B, 15C  |  |                                    |
|                              | Total resistance tolerance  | ±20%   | ±30%  | ±30%   | ±20%  |  |                                    |
|                              | Rated power   | 0.05W  | 0.03W   | 0.01W  | 0.05W   |  |                                    |
|                              | Maximum operating voltage   | 50V AC<br>20V DC   | 50V AC<br>for AC only   | 50V AC<br>5V DC  | 50V AC<br>20V DC  | 50V AC<br>for AC only  |                                    |
|                              | Gang error  | —  | -40dB to 0dB<br>3dB max.  | —  | —   | Volume control<br>-40dB to 0dB 3dB max.<br>For tone control<br>within 2dB<br>at center |                                    |
|                              | Insulation resistance   | 100MΩ min. 250V DC   |   |  | 100MΩ min.<br>500V DC   | 100MΩ min. 250V DC   |                                    |
|                              | Voltage proof   | 250V AC for 1minute  |   |  | 500V AC<br>for 1minute  | 300V AC for 1minute  |                                    |
|                              | Center-taps   | Without  |   |  | Without / With  | Without  | Without / With<br>(Volume control) |
| Mechanical performance       | Detent  | Without, Center  |   | Without  | Without, Center   | Without, Center  |                                    |
|                              | Stopper strength  | 0.3N·m   |   | —  | Without bushing 0.5N·m<br>With bushing 0.6N·m                                       | 0.5N·m<br>0.6N·m   |                                    |
|                              | Push-pull strength  | 50N max.   |   | 30N max.   | 80N max.  |  |                                    |
|                              | Vibration   | 10 to 55 to 10Hz/min., the amplitude is 1.5mm for all the frequencies, in the 3 direction of X, Y and Z and for 2 hours respectively |   |  |   |  |                                    |
| Shaft configuration          | Flat type, Knob type,<br>Screwdriver type   |  |   | Flat type  |   |  |                                    |
| Terminal style               | Insertion   |  |   |  |   |  |                                    |
| Page                         | 345<br>364(RK09D117)  |  | 352   | 353  | 357<br>364(RK12L12H,<br>RK12L127)   | 360  |                                    |

|   |     |
|---|-----|
| Insulated Shaft Potentiometers Soldering Conditions | 366 |
| Potentiometers Cautions                             | 418 |
| Potentiometers Measurement and Test Methods         | 420 |
| Potentiometers Resistance Taper                     | 422 |

### Note

● Indicates applicability to all products in the series.

## Reference for Manual Soldering

| Series   | Tip temperature | Soldering time | No. of solders |
|--|-----------------|----------------|----------------|
| <b>RK09D, RK09K, RK09Y11L,<br/>RK11K, RK12L, RK14K</b> | 350°C max.      | 3s max.        | 1 time         |

## Reference for Dip Soldering

| Series       | Preheating                    |              | Dip soldering         |                | No. of solders |
|--------------|-------------------------------|--------------|-----------------------|----------------|----------------|
|              | Soldering surface temperature | Heating time | Soldering temperature | Soldering time |                |
| <b>RK12L</b> | 100°C                         | 1 min. max.  | 260°C max.            | 5s max.        | 2 time max.    |

Rotary Potentiometers

Slide Potentiometers

Metal Shaft

Insulated Shaft

Knob Operating

Through Shaft Type

Ring Type

Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

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## JONHON

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